

Amendments to the Claims

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

1. (Currently Amended) An acryl-silicone hybrid impact modifier comprising:
0.01 to 10 parts by weight of a seed composed of the copolymer of a vinyl monomer and a hydrophilic monomer;
60 to 94 parts by weight of an acryl-silicone hybrid rubber core; and
6 to 40 parts by weight of a shell containing alkyl methacrylate;
wherein said seed is comprised of 60 to 99 parts by weight of a vinyl monomer, 0.5 to 30 parts by weight of a hydrophilic monomer, and 0.5 to 5 parts by weight of a cross-linking agent;
wherein said acryl-silicone hybrid rubber core comprises 55.0 to 97.5 parts by weight of an acrylic rubber core, and 2.5 to 45.0 parts by weight of a silicone rubber core;
wherein said acrylic rubber core consists of 97.0 to 99.9 parts by weight of an alkyl acrylate of which alkyl group has 1 to 8 carbon atoms, and 0.1 to 3.0 parts by weight of a cross-linking monomer; and
wherein said silicone rubber core comprises 90.00 to 99.65 parts by weight of a cyclic organosiloxane having 3 to 7 rings; 0.1 to 5.0 parts by weight of an organosilane cross-linking agent having 1 to 4 alkoxy functional groups; and
0.25 to 5.0 parts by weight of an organosilane graft-linking agent having an alkyl acrylate or methacrylate that may be readily radical-polymerized with 1 to 3 alkoxy functional groups; mercaptan, and 0 to 2 alkyl groups.

An acryl-silicone hybrid impact modifier comprising:

(A) 0.01 to 10 parts by weight of a seed composed of the copolymer comprised of:

- (i) 60 to 99 parts by weight of a vinyl monomer;
- (ii) 0.5 to 30 parts by weight of a hydrophilic monomer; and
- (iii) 0.5 to 5 parts by weight cross-linking monomer;

(B) 60 to 94 parts by weight of an acrylic-silicone hybrid rubber core comprised of:

- (i) 55.0 to 97.5 parts by weight of an acrylic rubber core; and

(ii) 2.5 to 45.0 parts by weight of a silicone rubber core;

wherein said acrylic rubber core consists essentially of (a) 97.0 to 99.9 parts by weight of an alkyl acrylate of which alkyl group has 1 to 8 carbon atoms; and (b) 0.1 to 3.0 parts by weight of a cross-linking monomer; and

wherein said silicone rubber core consists essentially of (a) 90.00 to 99.65 parts by weight of a cyclic organosiloxane having 3 to 7 rings; (b) 0.1 to 5.0 parts by weight of an organosiloxane cross-linking agent having 1 to 4 alkoxy functional groups; and (c) 0.25 to 5.0 parts by weight of an organosiloxane graft-linking agent having an alkyl acrylate or methacrylate that may be readily radical-polymerized with 1 to 3 alkoxy functional group, mercaptane, and 0 to 2 alkyl groups; and

C) 6 to 40 parts by weight of shell consisting essentially of alkyl methacrylate.

2. (Cancelled)

3. (Currently Amended) The acryl-silicone hybrid impact modifier according to ~~Claim 2~~ Claim 1, wherein said (A) (i) vinyl monomer is one or more kinds of compounds selected from the group consisting of styrene, α -methylstyrene, vinyl toluene, and 3,4-dichlorostyrene.

4. (Currently Amended) The acryl-silicone hybrid impact modifier of ~~Claim 2~~ Claim 1, wherein said (A) (ii) hydrophilic monomer is one or more kinds of compounds selected from the group consisting of alkyl acrylate such as ethylacrylate, butylacrylate, 2-ethylhexylacrylate, etc.; alkyl methacrylate such as methylmethacrylate, benzylmethacrylate, etc.; acrylonitrile; hydroxylmethylmethacrylate; and glycidylmethacrylate.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) The acryl-silicone hybrid impact modifier according to Claim 1, wherein said (B) (i) (a) alkyl acrylate is one or more kinds of compounds selected from the group consisting of methylacrylate, ethylacrylate, propylacrylate, iso-propylacrylate, butylacrylate, hexylacrylate, octylacrylate, and 2-ethylhexylacrylate.

8. (Cancelled)

9. (Currently Amended) The acryl-silicone hybrid impact modifier according to Claim 1, wherein said (B) (ii) (a) cyclic organosiloxane is one or more kinds of compounds selected from the group consisting of hexamethylcyclotrisiloxane, octamethylcyclotetrasiloxane, decamethylcycloheptasiloxane, dodecamethylcyclohexasiloxane, trimethyltriphenylcyclotrisiloxane, tetramethyltetraphenylcyclotetrasiloxane, and octaphenylcyclotetrasiloxane.

10. (Currently Amended) The acryl-silicone hybrid impact modifier according to Claim 1, wherein said (B) (ii) (b) ~~organosilane~~ organosilane cross-linking agent is one or more kinds of compounds selected from the group of trimethoxymethylsilane, triethoxymethylsilane, triethoxyphenylsilane, tetramethoxysilane, tetraethoxysilane, tetranormalpropoxysilane, and tetrabuthoxysilane.

11. (Currently Amended) The acryl-silicone hybrid impact modifier according to Claims Claim 1, wherein said (A) (iii) cross-linking monomer and (B) (i) (b) cross-linking monomer is one or more kinds of compounds selected from the group consisting of divinylbenzene, 3-butanediol diacrylate, 1,3-butanediol dimethacrylate, 1,4-butanediol diacrylate, 1,4-butanediol dimethacrylate, allylacrylate, arylmethacrylate, trimethylolpropane triacrylate, tetraethyleneglycol diacrylate, and tetraethyleneglycol dimethacrylate.

12. (Currently Amended) The acryl-silicone hybrid impact modifier according to Claim 1, wherein said (C) alkyl methacrylate for the shell is an alkyl methacrylate of which alkyl group has 1 to 4 carbon atoms.

13. (Original) The acryl-silicone hybrid impact modifier according to Claim 1, wherein said shell additionally includes 0.1 to 20 parts by weight of an aiding monomer which is one or more kinds of compounds selected from the group consisting of methylacrylate, ethylacrylate, butylacrylate, acrylonitrile, and methacrylonitrile based on the total monomers of the shell of 100 parts by weight.

14. (Original) The acryl-silicone hybrid impact modifier according to Claim 1, wherein the glass transition temperature of said acryl-silicone hybrid rubber core is -120°C to 25°C .

15. (Original) The acryl-silicone hybrid impact modifier according to Claim 1, wherein said acryl-silicone hybrid rubber core has a morphology in which a discrete polyorganosiloxane rubber phase is dispersed locally onto the inner part and surface of a continuous acrylic rubber core.

16-19. (Cancelled)

20. (Previously Presented) A vinyl chloride resin composition comprising 80 to 99 parts by weight of a vinyl chloride resin, and 1 to 20 parts by weight of said acryl-silicone hybrid impact modifier of Claim 1.

21. (Cancelled)